Real Assets House View 2020

The intelligence that guides our investment decisions

For today's investor

AVIVA INVESTORS

Contents

An introduction to the Real Assets House View by Mark Versey

Welcome to the first edition of the Aviva Investors Real Assets House View, which brings together the views and analysis of our investment teams in real estate, infrastructure and private debt.

Based on our own and credible external research, investors are increasingly turning to real assets to help them achieve their investment needs; whether for capital growth, sustainable income, beating inflation or meeting liabilities. Catering to these needs, which have an investment outcome rather than individual asset class allocation in mind, resulted in our decision in May 2018 to create an integrated real assets business. This kind of connected thinking also inspired the creation of this house view, which serves two main purposes. First, it provides a comprehensive, future-focused framework for discussion among our real assets investment teams; and secondly, it allows us to share and explain our thinking on trends and asset allocation to clients and other interested parties.

Overseen by the Real Assets Research team, we canvassed opinions from across the division on the key themes, opportunities and risks likely to impact real assets investment markets at both an individual and cross-asset class level. These views were discussed and debated at the first Real Assets House View Forum, held in November 2019, and during several follow-up sessions before a broad consensus was reached on the main aspects of the report.

The timing of these discussions was particularly pertinent. With growth uncertain, the level of negative-yielding bonds in the trillions, and questions being asked as to how long the bull run in equities can continue, it is perhaps unsurprising investors are increasing allocations to real assets for returns, as well as the diversification and cashflow-matching characteristics such assets can offer. At the same time, higher demand is squeezing value in certain parts of the real assets universe. The sector is also grappling with major structural shifts; from the inexorable growth of flexible working to fierce debate over the public-private partnership model; from the decline of traditional retail to the rise of the knowledge economy.

The house view hopes to help investors navigate this dynamic and challenging landscape. Not everyone will agree with the assumptions made or the conclusions reached. No-one ever said predicting the future was easy, but this report represents our best collective judgement on the current and future investment themes we believe will shape the real assets market.

Mark Versey
Chief Investment Officer,
Aviva Investors Real Assets

Investors are increasingly turning to real assets to help them achieve their investment needs; whether for capital growth, sustainable income, beating inflation or meeting liabilities.

The outlook for real assets

Economic context: Slow growth supporting low rates

Global growth is now expected to increase gently to about three per cent by the end of 2020

Global growth has slowed from the boom-like four per cent at the start of 2018 to a below-trend pace of around 2.8 per cent in the year to Q3 2019. Yet, concerns over the heightened recession risk have moderated as financial conditions have eased, global trade dialogue became more constructive, and tentative signs of an end to the deep manufacturing downturn have emerged. Global growth is now expected to increase gently to about three per cent by the end of 2020.

A "lower-for-longer" environment for interest rates is likely to persist for several years. The effective absence of inflation pressures alongside – at best – modest growth prospects, means central banks are set to stay in accommodative mode for some time, even if there is limited scope for additional stimulus. The next tightening cycle looks a while off. However, we do expect a reversion of interest rates towards their long-term average over the next ten years.

In the euro zone, 2019 was yet another year of growth and inflation disappointments. Our central view is that GDP growth will average around one per cent next year. Meanwhile, low inflation implies a continuation of the accommodative stance from the European Central Bank for the foreseeable future.

Rebalancing towards domestic demand – whether deliberate or not – has helped euro zone economies become more resilient. It is noteworthy, at least so far, that even the manufacturing powerhouses of Germany and Italy have avoided recession because of offsetting rises in domestic spending. However, any optimism should not be stretched too far: overall growth remains sluggish, unemployment has stopped falling and is close to most estimates of the natural rate, and long-term demographics and poor productivity growth are all headwinds for the future.

Since the 2016 referendum on the UK's membership of the European Union, the UK has underperformed its peers, having previously matched or exceeded them. Brexit is an obvious candidate for the root cause of slowdown, especially as it was weak or falling investment that has been the main explanation. A rapid recovery of business investment appears unlikely. Until now, household spending has been more resilient, supported by a surprisingly robust labour market which has boosted incomes. Inflation is below target and will fall further. Consequently, the Bank of England has, rightly in our view, become more dovish.

Three themes

a) 'Lower-for-longer' supports long-duration assets value

The yield premium for real estate over government bonds is high by historical standards

The 'lower-for-longer' interest rate environment is likely to extend the real assets investment cycle.

At current levels, the yield premium for real estate over government bonds is high by historical standards. This is expected to continue in the medium term, with low rates supporting valuations. Yet, for long-term investors, real estate long income is expected to deliver higher income than traditional real estate, particularly as maintenance costs are typically borne by the occupier.

Meanwhile, the low rate environment continues to offer real asset equity investors an opportunity to obtain long-term finance to enhance yields. We therefore expect the flow of refinancing transactions to persist. In the euro private debt market, the base interest rate Euribor is negative. However, many syndicated loans benefit from a Euribor floor at zero, ensuring lenders maintain relatively attractive returns.

b) Premia unlocked by exploiting complexity

Uncertainty over global growth means institutional investors will keep looking to real assets for diversification and a potential illiquidity premium (i.e. a higher return than the yield of a comparable bond). But the weight of capital targeting the sector has pushed yields down. To unlock more attractive returns, while staying within risk tolerance, investors need to be well placed to exploit complexity. That could be achieved through deep expertise of specific markets, a specialist understanding of a particular sector, or structuring complex finance transactions, for example.

More operational risk is also being taken. In real estate, lenders and owners are becoming increasingly aware that maintaining and growing income requires more active management. For example, in real estate, the shift towards flexible office space is likely to mean rental income streams reflect changes in market rents more quickly, which makes underwriting more complex. Similarly, in infrastructure, emerging asset classes such as data transmission networks or energy from waste have complex revenue structures or operations.

Opportunities exist in real estate development where demand is robust and supply is constrained. This is particularly prevalent in locations experiencing transformational change, for example improvements in infrastructure. Building new infrastructure in the energy and data transmission sectors is another way to enhance returns by insourcing development.

Complexity can also generate an additional premium in the debt market – private structured finance transactions can attract significant premia over similarly rated public bonds.

c) ESG becomes non-negotiable

Environmental, social and governance (ESG) factors are already important considerations for many real asset investors. However, with potential exposure to material risks on one hand, and better outcomes for society on the other, ESG will become impossible to ignore. This represents an important step-change: covering ESG is no longer a tick-box exercise. In 2020, ESG risks must be actively monitored and managed.

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We expect the focus on the environment to be particularly intense, as scientists have reiterated that urgent action is required in the face of climate change. Buildings and infrastructure currently use around two thirds of all the energy produced each year and generate significant volumes of carbon dioxide – so physical assets need to be much more efficient to help ease the transition towards a more sustainable economy and a greener world. Investment opportunities in green buildings, renewable energy, battery storage and heat distribution networks are likely to attract investor interest as the economy adjusts to a low carbon future. Conversely, the risk of stranded assets – for example in coal-fired plants, coastal real estate and inefficient buildings – is rising.

This is an area that is developing rapidly and implies additional costs for the asset management industry, both in terms of measuring and reporting. Meeting the growing regulatory pressure to disclose climate and ESG metrics may favour larger sponsors.

Relative value across real assets

- **For a UK income-focused investor, long income real estate and renewables are the most attractive**
- **Sterling senior secured fixed rate debt is well suited for liability matching portfolios, but floating rate debt and income strips are more attractive**
- **Renewables and real estate offer significant diversification benefits in an income portfolio**

In this section, we assess the relative attractiveness of different parts of the real assets universe on a risk-adjusted basis. This assessment of relative value informs managers investing across real assets, allowing them to take full advantage of the broad opportunity set to deliver stronger performance.

Our recent Real Asset Study showed most investors allocate to real assets to achieve sustainable income

Real assets can be used in a portfolio to deliver different investment outcomes: matching liabilities, beating inflation, sustainable income and growth. Our recent Real Asset Study showed most investors allocate to real assets to achieve sustainable income. We have therefore in this paper taken the perspective of an income seeking long term investor (at least 10 years horizon).

Income return, net of depreciation, is therefore a key measure in our calculation of relative value. We compare the level of income each asset class is likely to deliver against the risk of achieving it, defined as the dispersion of potential returns around the mean (or expected) level. This helps compare the relative attractiveness of different asset classes.

This analysis compares different asset classes at a generic, market level; portfolios and funds will inevitably be less diversified, and so will their risk profile. The specific investment strategy and manager's skill will all contribute to generate returns that could be significantly higher (or lower) than those shown here. We explore which strategies look most attractive within each asset class in later sections.

Figure 1. **The real asset universe**

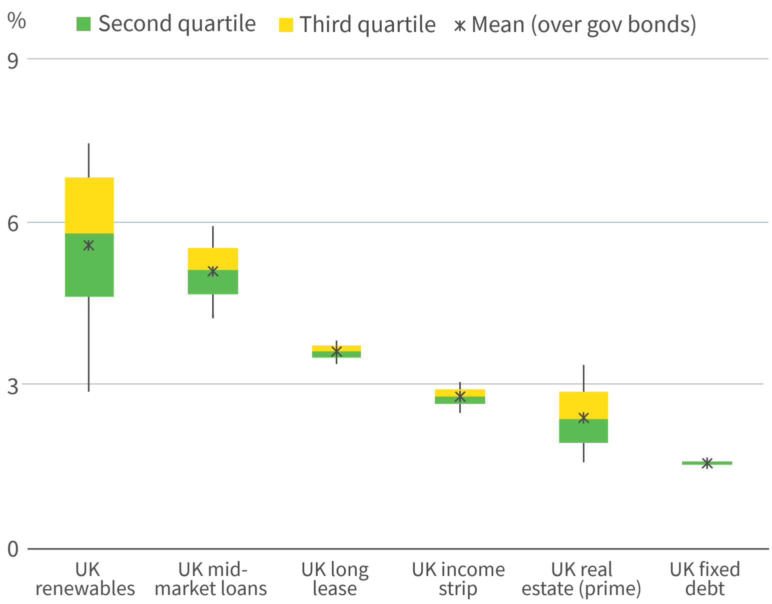
The real asset universe is vast, and includes real estate, infrastructure, and private debt assets. Other than property, aggregate market data is not available to model the entire universe. Accordingly, we have modelled representative portfolios within each sub-sector, as outlined below:

	UK	Europe ex-UK		
Real estate	Unlevered UK institutional real estate consisting primarily of office, retail and industrial properties	Unlevered European prime institutional real estate, consisting primarily of office, retail and industrial properties		Equity
Infrastructure: Unlevered renewables	Unlevered renewables portfolio comprising onshore wind (with ROC and FiT subsidies) and solar assets with FiTs			
Long lease	Real estate let to high quality tenants, on inflation linked, 20 year, fully-repairing and insuring leases	Real estate let to high quality tenants, on inflation linked, 15-year leases	Long income	
Income strips	Inflation-linked, 30-year income strips with high quality tenants, (with no terminal value)			
Senior secured fixed rate debt (infra and real estate)	Fixed-rate senior-secured debt of investment-grade quality with 15 to 25 year maturity backed by infrastructure or commercial real estate (50 / 50)		Fixed rate	Debt
Senior secured floating rate debt (infra and real estate)	UK senior-secured loans backed by infrastructure or commercial mortgages (50/ 50), with maturities of between 7-15 years, cross-over credit quality	Senior-secured loans to Western European borrowers backed by infrastructure or commercial mortgages (50/ 50) with maturities of 7-15 years, cross-over credit quality	Floating rate	
Mid-market loans	Covenanted senior loans to small and mid-sized corporates (BB/B credit quality, 7-year tenor)	Covenanted senior loans to small and mid-sized corporates (BB/B credit quality, 7-year tenor)		

Source: Aviva Investors, as at January 2020. See Appendix for further information on the methodology used. ROC is the Renewable Obligation Certificate. FiT is the Feed in Tariff

Long income real estate (both long lease and income strips) is attractive for sustainable income. Renewable infrastructure offers higher, but less certain, returns

Figure 2. **Full life income return over risk free rate - UK assets**



Source: Aviva Investors, as at January 2020. See Appendix for further information on the methodology used.

For a UK income-focused investor, there are strong opportunities in long income real estate and renewables, as well as mid-market loans.

Long lease property offers a higher expected return than traditional real estate with lower dispersion of potential outcomes. The real estate yield premium over government bonds is still relatively high, but the income erosion due to maintenance costs is significant in a low-rate environment.

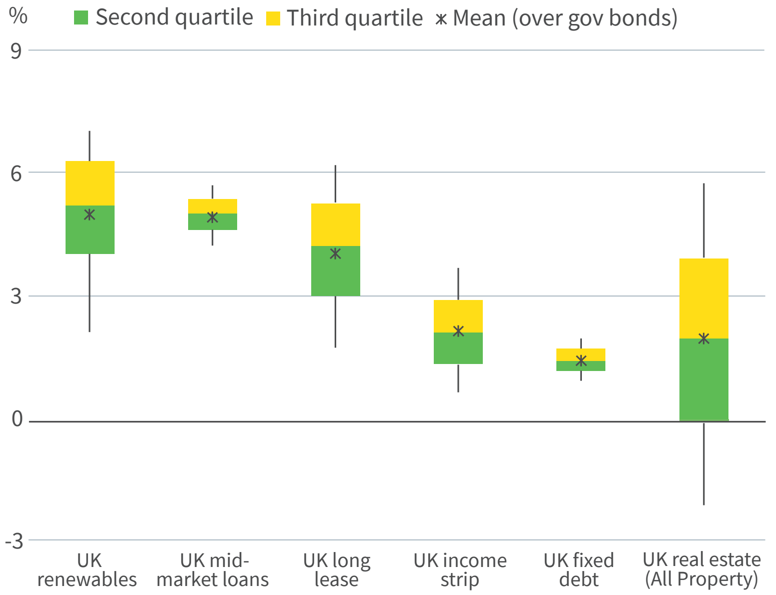
In our analysis, unlevered UK renewables delivers a higher expected mean return than other asset classes – outperforming all other equity asset classes roughly 75 per cent of the time – albeit with a greater dispersion of potential returns (i.e. more risk). Power prices – which are somewhat volatile – drive a significant portion of revenues for onshore wind assets, increasing risk. This risk can potentially be reduced through fixed price power-purchase agreements, but this would also depress returns.

The picture is different for investors with a total-return focus. Renewable assets have a shorter lifespan than real estate and offer higher yields but depreciate faster. Therefore, with a ten-year horizon, the terminal value of renewables is less important and the dispersion of total returns is lower than traditional real estate and on a par with long lease assets, as shown in figure 3.

Income strips provide a pure inflation-linked cash flow with no residual value risk which, despite a lower expected return than long lease property, may be attractive to liability-matching investors.

For a UK income-focused investor, there are strong opportunities in long income real estate and renewables, as well as mid-market loans

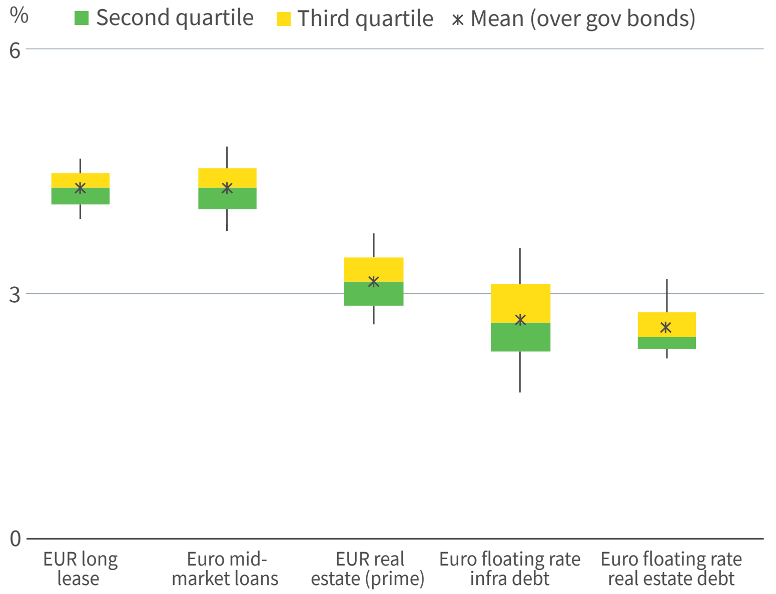
Figure 3. **Total Return (10yr IRR) – UK assets**



Source: Aviva Investors, as at January 2020. See Appendix for further information on the methodology used.

While absolute returns are lower for euro-denominated assets, the premium over government bonds is broadly at the same level as the UK due to very low government bond yields in Continental Europe. The relative value picture is similar, with long lease assets outperforming core real estate for sustainable income. The gap between the expected return in real estate debt and equity is low (less than 0.5 per cent).

Figure 4. **Income return over risk free rate – Euro assets**



Source: Aviva Investors, as at January 2020. See Appendix for further information on the methodology used.

Income strips and floating-rate debt appear more attractive than fixed-rate senior debt

Sterling senior-secured fixed-rate debt is well suited for liability-matching portfolios, but floating-rate debt and income strips are more attractive.

Figure 5. **Ranking assets by risk adjusted return – UK**

Source: Aviva Investors, as at January 2020. See Appendix for further information on the methodology used.

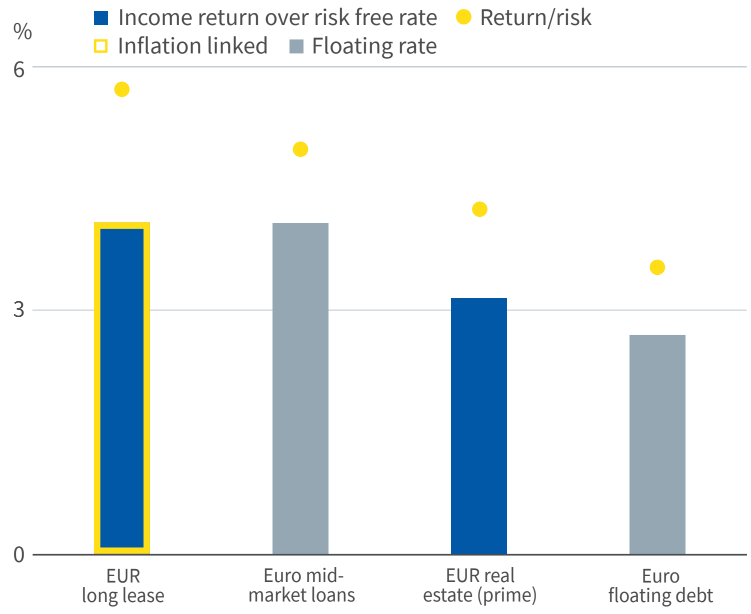
Figure 5 ranks UK asset classes in order of decreasing return/ risk ratios and shows the expected income return over the risk-free rate for each asset class. Fixed-rate debt, long lease assets and income strips are the best performers from that perspective. Of those, long lease offers the highest expected income, but income strips and fixed-rate debt may be better suited to insurance clients seeking liability-matching assets. Income strips also look attractive relative to long-duration, fixed-rate debt; inflation would need to average less than one per cent over 30 years for income strips to underperform.

Long lease offers the highest expected income, but income strips and fixed-rate debt may be better suited to insurance clients seeking liability-matching assets

For liability-matching portfolios, senior-secured fixed-rate debt offers a solid premium over government bonds with low risk. However, investors with more risk appetite may find higher income in floating-rate debt, particularly mid-market loans, although such investors must be mindful of downside risks.

Among the modelled European asset classes, long lease real estate appears the most attractive, as shown in Figure 6. Despite negative base rates, private loans in the mid-market sector also offer value, particularly as most syndicated corporate and mortgage-backed loans benefit from a Euribor floor.

Figure 6. Ranking asset classes by risk adjusted return – Euro



Source: Aviva Investors, as at January 2020. See Appendix for further information on the methodology used.

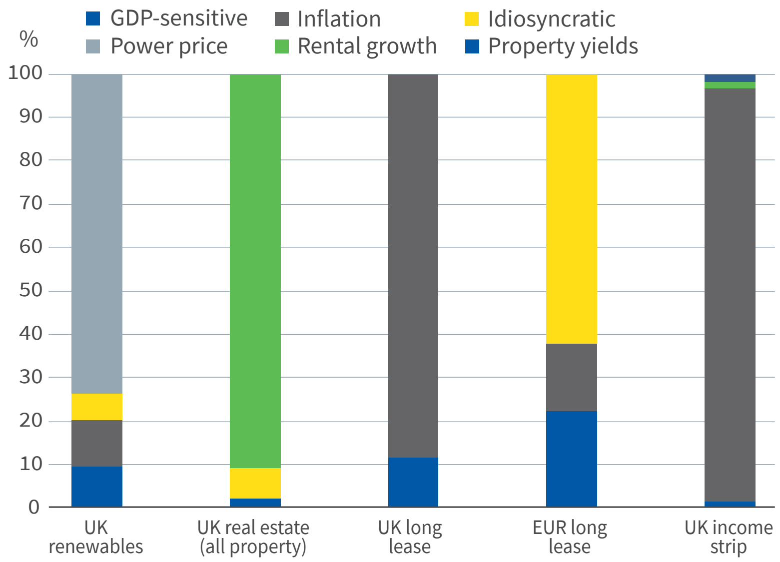
Renewables and real estate offer significant diversification benefits in an income portfolio

Understanding what drives the risk and return of certain assets is as important as measuring them

Understanding what drives the risk and return of certain assets is as important as measuring them.

The graph below shows factors contributing to the risk for each equity asset class: power prices (for renewables), rental value growth and inflation are the three main drivers. This is different from fixed income, where the main risk driver is the level of defaults (generally linked to GDP growth). In this respect, infrastructure and real estate could bring diversification to a fixed-income portfolio.

Figure 7. Risk drivers of income



Source: Aviva Investors, as at January 2020. See Appendix for further information on the methodology used.

Relative value for income portfolio

While every portfolio needs to be tailored to the specific objectives of each client, for long-term institutional investors seeking to achieve sustainable income by investing in real assets, below is a summary of our allocation view.[1]

Figure 8. Relative value of real assets for income portfolio

Source: Aviva Investors, as at January 2020. See Appendix for further information on the methodology used.

1 This view does not take into account regulatory constraint nor capital considerations.

Real estate market overview

Less attractive		Neutral		More attractive

While the short-term outlook remains favourable, the risk-return profile of traditional real estate looks relatively unattractive at an overall market level over the long term. Nevertheless, the dispersion within the asset class means there are good investment opportunities for selective investors with strong local expertise.

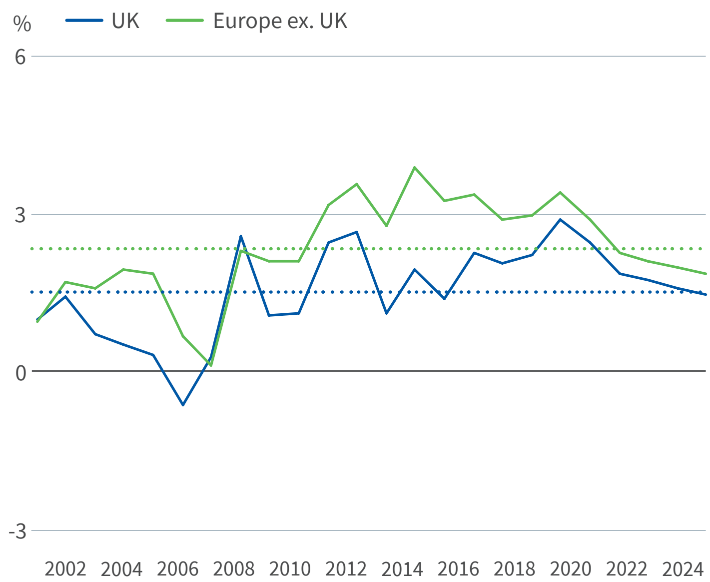
Despite a slowdown, demand for Continental Europe real estate is very strong

Despite a slowdown, demand for Continental Europe real estate is very strong. Yields continued to fall across all property sectors in 2019, reflecting high competition. Retail is the only sector showing evidence of weakness as investors are aiming to reduce their exposure to such assets. In the UK, occupier markets across the main asset classes are slowing and investment activity remains muted. Following six years of robust transaction volumes, activity slowed markedly (-26%) in 2019. The alternative sector is the only one to buck the slowing trend.

Lower interest rates support the cycle in Europe

In the short to medium term, we believe real estate investors are generally well compensated for associated risks, even if expected returns are low by historical standards. Given expectations of an eventual degree of normalisation in interest rates and real estate yields, the long-term outlook is challenging, but there are opportunities capable of providing attractive risk-adjusted returns.

Figure 9. **All property yield premium over government bonds**



Source: Aviva Investors, as at January 2020. See Appendix for further information on the methodology used.

Investors should focus on a few key locations benefiting from talent, clusters, and where there are significant constraints to new development

Talent is key driver of growth

Investors should focus on a few key locations benefiting from talent, clusters, and where there are significant constraints to new development. Concentrating on these locations should generate sustained rental growth over the long run.

In Europe, London and Paris stand out as a magnet for global talent. Stockholm, Berlin, Amsterdam and Copenhagen have world-renowned clusters in digital and biotech fields, while Munich, Frankfurt and Dublin compete globally with vibrant activity in the financial, automotive, tech, media, cultural and creative industries and engineering sectors.

Focus on structural trends to play against the cycle

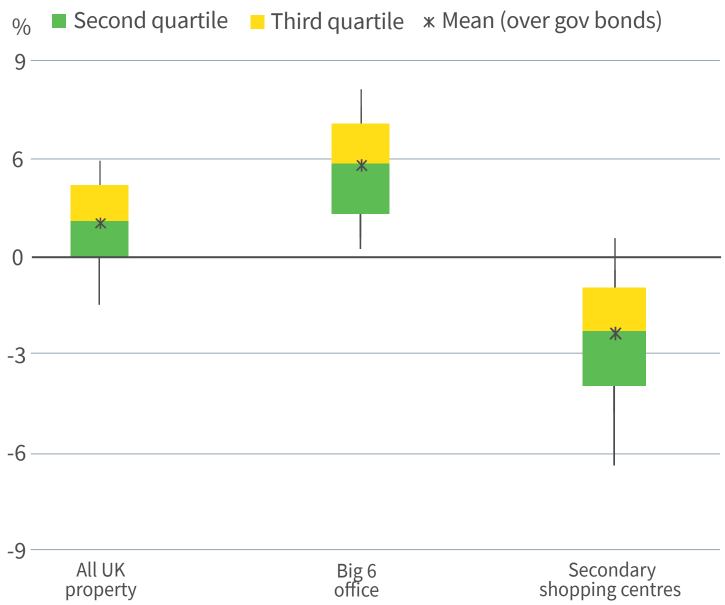
Long-term investors should look beyond medium-term assessments of return prospects to key structural trends shaping markets. Long-term, structural drivers of real estate are likely to provide opportunities as well as risks, including technological change, automation, the shift in consumer preferences demographics and environmental issues.

Long-term investors should look beyond medium-term assessments of return prospects to key structural trends shaping markets

In logistics, for example, most Continental European markets have been boosted by the transition to e-commerce. Strong occupier markets are likely to drive office performance in Paris, where development constraints suggest scope for sustained rental growth. Prospects in Copenhagen, some German cities, Amsterdam and Lyon also look positive.

In the UK, structural changes impacting retail are materially dragging down expected returns, despite the higher yield. There is a high dispersion between market segments; we forecast ten-year total returns of -3.1 per cent for secondary shopping centres versus 4.9 per cent for offices in the six biggest locations.[2] There is further dispersion at the asset level, providing the potential for outperformance and strong opportunities for selective investors.

Figure 10. **10yr IRR distributions**



Source: Aviva Investors, as at January 2020. See Appendix for further information on the methodology used.

Risks

The outlook for the economy has deteriorated over recent months, with rising political and economic uncertainty increasingly affecting risk appetite and demand across Europe. A slower increase in interest rates than we expect could provide an upside risk to our expected returns.

While supply remains modest across most European real estate markets, development has picked up in some cities such as central Paris, Berlin, Amsterdam and Dublin. One risk to our central scenario is that development might increase more quickly than we anticipate, with a negative impact on rental growth. Investors should also be aware of the impact of the growth of flexible space on office markets, notably because it has translated into increased management intensity and capital expenditure for all lease types, and effectively into higher-income risk for landlords.

2 Manchester, Birmingham, Glasgow, Edinburgh, Bristol and Leeds.

Long-income market overview

Less attractive		Neutral		More attractive

Long income real estate compares favourably to both long-duration fixed-rate debt and traditional real estate; offering a higher return than the former and a more certain and higher expected return than the latter. We feel all three sub-segments of the long income asset class - income strips, UK long lease and European long leases - are attractive at the current time.

Long-term leases to high quality counterparties offer much greater income predictability than traditionally-let real estate

In the first nine months of 2019, long-term government bond yields fell by 86 bps, while long lease yields declined by just 11bps.[3] This improved the asset class's relative attractiveness, particularly for liability- and cashflow-driven investors. Long-term leases to high-quality counterparties offer much greater income predictability than traditionally-let real estate. Given rising economic risks, this predictability does not seem appropriately reflected in the yield difference between the two asset classes.

At the beginning of 2019, a new lease accounting methodology was introduced, under which leases are recognised as assets and liabilities on tenants' balance sheets. This was widely considered to negate some of the benefits of sale-and-leasebacks for companies. A slowdown was observed in the UK during the year, but this was in part attributable to Brexit uncertainty. Some companies continue to utilise forward-funding arrangements as a means of procuring buildings purpose-built for their needs.

amirraizat / Shutterstock.com

Local authorities and universities remain a key source of opportunity

Austerity measures have hurt the financial position of public-sector entities over the past decade. Many have looked to the private sector to finance development of their real estate or monetise their existing holdings. Local authorities are seeking to regenerate town centres to stimulate their local economy and increase their business rate or council tax income in the process. Income strips have become a popular means for local authorities to fund such regeneration projects, due to their ultra-long tenor, flexibility, and certainty over long-term ownership.

Student accommodation is another sector presenting opportunities, as universities look to improve their offering to attract students. The supply-demand balance varies vastly by city, and bifurcation in university performance means a selective approach to university partners must be taken.

Structured products drive value

Working bilaterally with vendors or owner-occupiers on off-market transactions offers the most value in the long income real estate market. By working closely with vendors, tenants or guarantors, it is possible to structure transactions to meet their unique requirements. These transactions are often more complex and have longer lead times, but can offer more attractive pricing.

Growing market in Europe

The long income real estate market in Continental Europe is more nascent. Many companies continue to own real estate, whereas there has been a trend towards "asset-light" models for some years in the UK. This presents a large opportunity for investors to originate long leases directly from occupiers. There is some evidence that established long lease structures,

3 CBRE Long Income Index, Q3 2019.

such as income strips and commercial ground rent leases, are coming from the UK over to Europe. This is a development we expect to increase with the entry of new players into market, as we have seen during 2019.

Risks

Tenant default is the key risk for individual long income assets, but this can be mitigated through diversification. At this stage of the cycle, the best opportunities are in assets let to highly creditworthy tenants.

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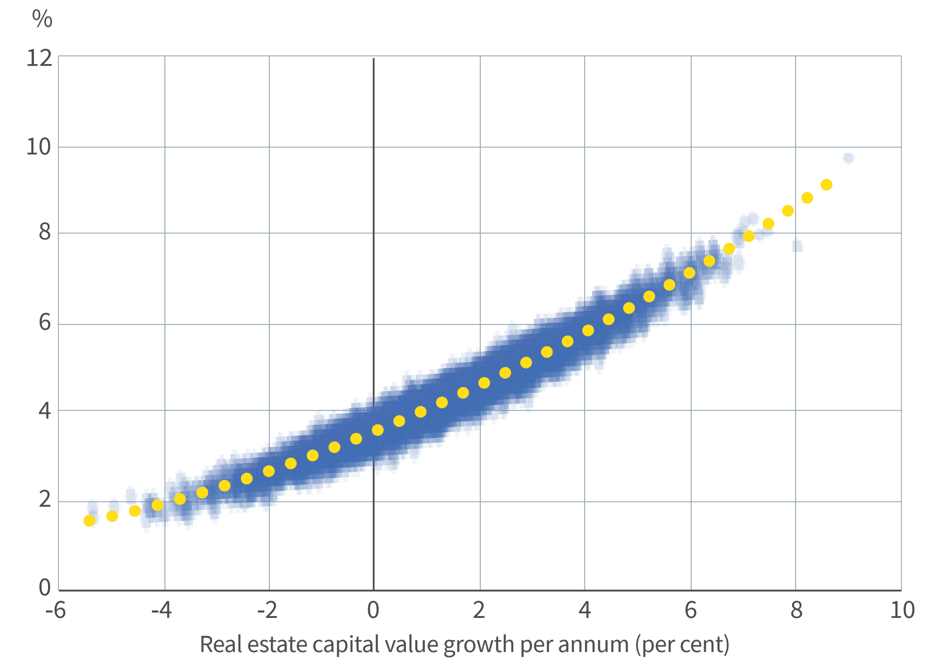
In the UK, a new risk that emerged during 2019 was a proposed reform to the measurement of inflation, with RPI to be aligned with CPIH, with the latter being typically around one per cent lower than the former historically. In the past, the government has been clear in its intention to leave the calculation of RPI unchanged. The likelihood of such a change being implemented remains unclear, a consultation is expected in the first half of 2020, which should potentially offer more clarity.

Income strips are at the bottom of the long income risk spectrum as they offer close to a fully inflation-linked cashflow stream with low default risk. Long lease real estate has a wider dispersion of expected returns, linked to uncertainty in property values. For UK investors, with fewer regulatory restrictions, they appear to be fairly compensated for this risk. For income strips to outperform long lease in the UK, property values would need to fall by roughly 40 per cent in real terms over the next 20 years. We assess the probability of this occurring to be roughly one in three.

Figure 11. **UK long lease full life IRR versus real estate capital value growth**



Source: Aviva Investors, as at January 2020. See Appendix for further information on the methodology used.

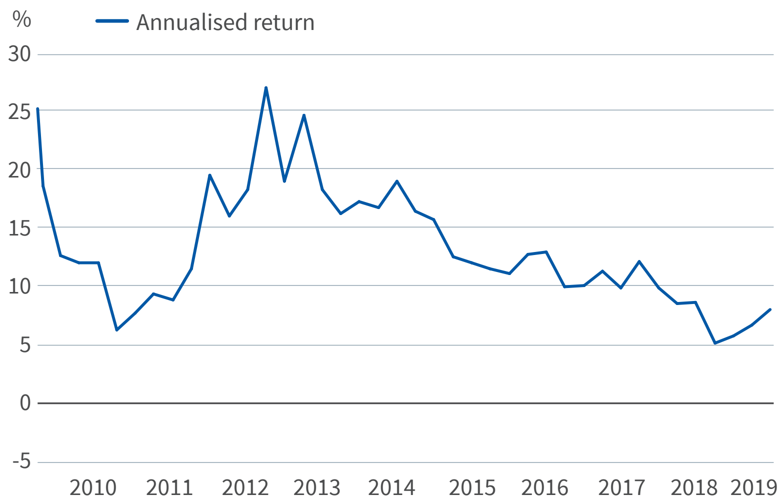
Long income real estate yields, like all property sectors, tend to be sensitive to government bond yields, with a lag. Therefore, government bond yields present a risk for investors with shorter time horizons.

Infrastructure market overview

The infrastructure asset class is heterogenous, with varying levels of risk and returns. We modelled an unlevered UK renewables portfolio comprising wind and solar assets subject to the ROC and FiT regimes. UK renewables offer the highest expected return within the asset classes modelled, albeit with a relatively wide range of potential outcomes.

In the four years to March 2019, European infrastructure funds roughly doubled assets under management.[4] This growing demand has boosted asset values and puts pressure on returns.

Figure 12. **Historic return of developed market infrastructure (levered)**

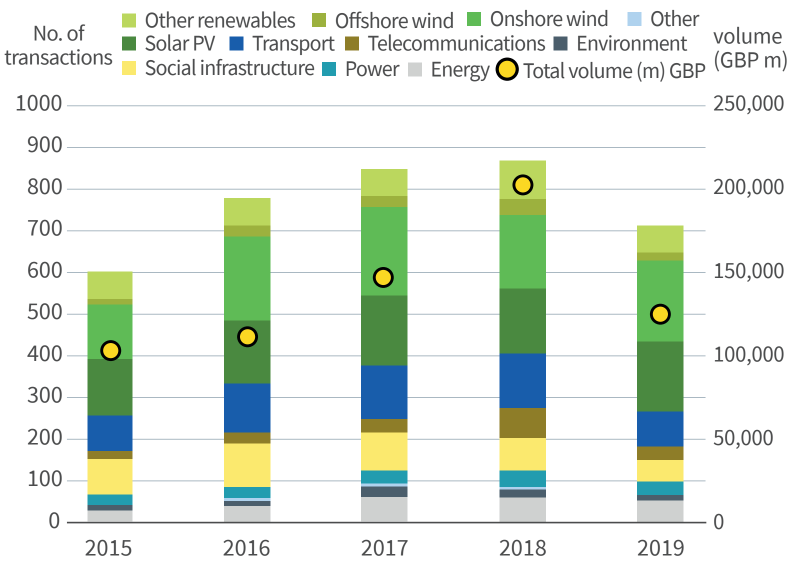


Source: Inframation

Renewable energy remains the most active sector

Renewable energy remains the most active sector, although its share fell to 44 per cent of UK transactions in the first nine months of 2019 as subsidies were curtailed.[5]

Figure 13. **European infrastructure transactions excluding refinancings**



Source: Aviva Investors, as at January 2020. See Appendix for further information on the methodology used.

Greenfield infrastructure volumes decreased in 2019, but the need for new build remains acute: the European Investment Bank estimates investment needs to double to support EU policies, including decarbonisation targets. In the UK, the net-zero target will require a quadrupling of renewable generation and doubling of the annual investment in the power sector,[6] in addition to large investments in heat networks, waste management and electric vehicle charging points.

The European Investment Bank estimates investment needs to double to support EU policies, including decarbonisation targets

Wind and solar

In spite of the termination of new subsidies for onshore wind and solar in the UK, there are still opportunities to acquire subsidised generators. Such opportunities are increasingly scarce, which has increased competition. Nonetheless, onshore renewable energy still offers an attractive premium over long-term gilts.

In Continental Europe, corporate power purchase agreements (PPAs) are becoming an increasingly common method of securing long-term predictable revenues from renewable generators.

EQRoy / Shutterstock.com

Energy from waste (EfW)

Many European countries, including the UK, have a shortage of waste-processing infrastructure and continue to rely heavily on landfill. For investors with expertise in the sector, greenfield EfW projects with strong contractual structures can offer attractive risk-adjusted returns, long-term, inflation-linked revenues and diversification from wind and solar assets.

Digital infrastructure

Demand for data from both households and businesses around the world is rapidly increasing: IDC expects global data creation to grow at a 27 per cent compound annual growth rate between 2018 and 2025.[7] To achieve this, new investments will be required in fibre networks, data centres and cell towers.

Risks

Infrastructure assets generally have low exposure to GDP, as they are essential and/or because of their contractual structures. This makes infrastructure a good diversifier.

Infrastructure assets generally have low exposure to macroeconomic factors, as they are essential and / or because of their contractual structures

It has, however, become increasingly difficult to find assets with long-term contracted, high-quality income, as PPP programmes and renewable subsidies reduce. Renewable investors are increasingly exposed to volatile power prices. Furthermore, intermittent renewables may also cannibalise each other by generating simultaneously, leading them to capture lower-than-average power prices. There are a wide range of scenarios for how power generation capacity will evolve, with implications for power prices and renewables' capture price discount.[8]

While renewable energy supports the green transition, other infrastructure assets, such as thermal power plants, aviation and roads, will require significant investment to align to the net-zero carbon target. Some assets could become obsolete earlier than expected.

Political risk is also expected to remain high in 2020, given the polarised political climate across Europe. In the UK, many infrastructure investors may have been relieved by the outcome of the recent election, given the Labour party's plans to nationalise swathes of infrastructure assets. Nonetheless, political risk is expected to remain high as the general public and government bodies are placing heightened scrutiny on infrastructure asset owners and their environmental and social impacts.

4 This growing demand has boosted asset values and puts pressure on returns.
5 Inframation.
6 'Net Zero The UK's contribution to stopping global warming,' Committee on Climate Change, 2019.
7 'The Digitization of the World,' IDC, 2018
8 Capture price discount, the percentage discount of the average power price that a renewable generator sells power for versus the time-weighted average market price.

Private debt market overview

Less attractive		Neutral		More attractive

As an asset class, mid-market loans are expected to generate higher income than all other modelled asset classes bar infrastructure. However, diversification is essential to mitigate downside risk. Floating-rate loans secured by real assets are assessed as attractive and expected to outperform long-duration fixed-rate debt. Despite lower returns, fixed-rate debt offers an illiquidity premium over public bonds, as well as the highest return over risk ratios of modelled asset classes – we assigned a neutral rating to reflect these conflicting factors.

The private debt market remained active in 2019 thanks to a heavy flow of refinancings.

The private debt market remained active in 2019 thanks to a heavy flow of refinancings. However, M&A and real asset transactions volumes (including greenfield infrastructure) were down over the previous year.

Banks continue to lend aggressively in Europe, helped by loosening measures from the European Central Bank, yet they increasingly rely on institutional lenders to distribute assets and manage capital. Competition has been intense for loans in well-favoured sectors, such as prime property and renewables, which has compressed margins. In some sectors, the illiquidity premium has been eroded although it was maintained elsewhere as public bond spreads remained low.

Exploiting complexity to derive value

Higher illiquidity premium can be found in complex transactions.

Higher illiquidity premia can be found in complex transactions. For instance, debt funds are increasingly using leverage to enhance yields. Despite concerns over rising leverage, such loan-on-loan structures offer better returns than a collateralised loan obligation, as well as greater protection through privately negotiated covenants.

The digital economy will increase lending opportunities in data infrastructure (telecom towers, broadband and data centres), while the net-zero carbon target will encourage the development of new infrastructure sectors, including electric-vehicle charging, battery storage, hydrogen-based heating and district heating. All these new sectors will require detailed analysis as their revenue structures are more complex than more traditional sectors.

Selective investment in less sought-after sectors

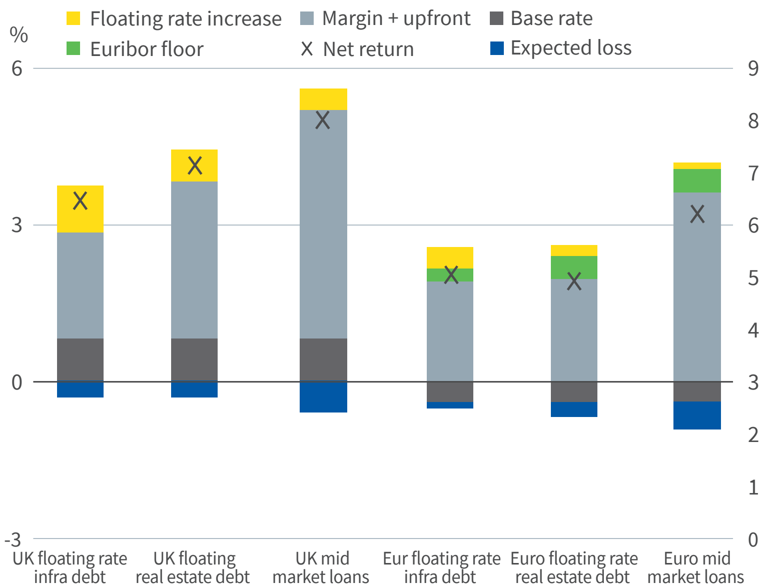
The infrastructure cross-over market, including EfW, biomass, broadband and infrastructure corporate, looks to offer better value than traditional renewables. Such credits are secured by resilient cash flows and offer a lower risk profile than the high-yield market – albeit typically at lower spreads. For commercial mortgages, we favour prime locations but see opportunities lending against secondary assets where the playing field is less competitive. Similarly, lending at low leverage against assets in prime retail destinations is a way to capitalise on opportunities created by investors exiting the sector.

Well diversified mid-market and shorter-duration loans

We expect shorter-duration and mid-market loans to provide better income than longer-term institutional fixed-rate debt, particularly in Europe where many loans benefit from the Euribor floor. However, investors should be selective on risk.

We expect shorter-duration and mid-market loans to provide better income than longer-term institutional fixed-rate debt

Figure 14. **Floating rate debt expected return**



Source: Aviva Investors, as at January 2020. See Appendix for further information on the methodology used.

Risks

While recession concerns have abated, there is still a significant risk of loan defaults increasing from their current low level. Senior-secured debt backed by real assets looks well positioned to withstand a downturn. In non-investment grade assets, selectivity and diversified portfolio construction are needed to mitigate the higher risk of those loans.

Appendix: Methodology for relative-value analysis

Riskier assets are those where there is the widest range of outcomes over the holding period

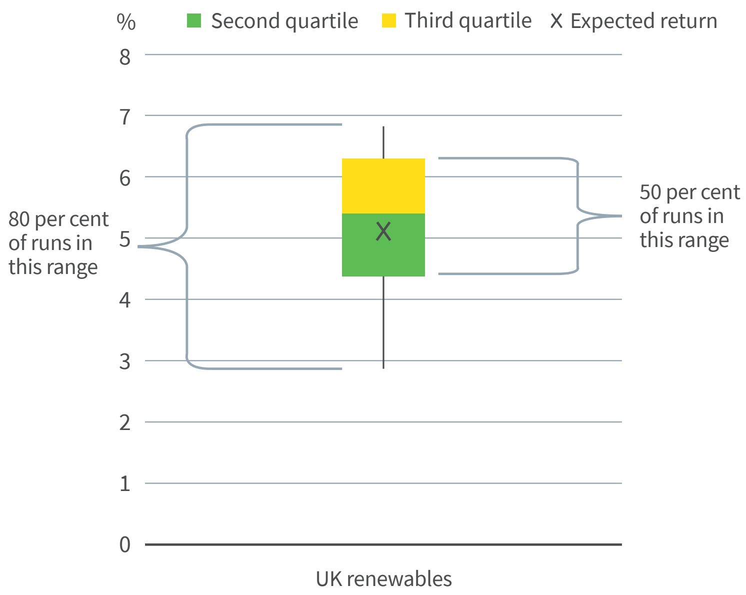
To compare different parts of the real asset universe, we developed an in-house methodology to forecast expected risks and returns on a consistent basis. Returns are measured from two perspectives:

- **Income return:** the return that is earned by investors over the asset life[9] above returning the invested capital. This measure is most relevant for investors seeking a sustainable income.
- **Total return:** the expected IRR for an investor who buys at year one and sells at year ten, at a price consistent with our view of interest rates and asset yields at that time.

We have considered a static portfolio, without any reinvestment – reflecting the return that accrues to a closed-end fund investor, capable of holding investments for ten years. For each asset class, we have run 5000 simulations of returns by varying each of the relevant parameters for this asset class in a stochastic way. Factors considered included interest rates, credit default rates, rental growth, inflation, property yields, power prices etc. The outcome is a range of 5000 possible returns, with the mean of this distribution being the "expected return".

We also provide a **risk** measure, which is the standard deviation of simulated returns. Riskier assets are those where there is the widest range of outcomes at the end of the holding period, rather than assets with more volatile returns from year to year.

Figure 15. **Full life income IRR over matched duration government bonds**



Source: Aviva Investors, as at January 2020. See Appendix for further information on the methodology used.

We present the distribution of returns in a graph that shows the range of results for these 5000 simulations. The thick bar represents the second and third quartile of the distribution. This means that 50 per cent of the time, returns are projected to fall within that bar. 80 per cent of the results fall between the second and ninth decile, represented by the vertical line on the chart.

9 For traditional real estate we have modelled a 20-year hold period.

The cross represents the mean of the distribution, or expected return.

The relative attractiveness from a risk-adjusted return basis is measured as: Return / risk = [expected return minus risk free rate] / standard deviation of returns. Our analysis is based around the following macroeconomic assumptions:

– Rates will stay 'lower for longer,' but they will progressively revert to their normalised long-term level[10] over the next ten years. This will benefit, for example, floating-rate debt.

– Inflation will be in line with central bank targets.

We have considered a range of outcomes around this central base case to model asset returns.

10 Three per cent for long term Sterling rates.

Notes

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